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February 4, 2005

Mr. Jay Bento
City of Santa Ana Fire Department
1439 South Broadway
Santa Ana, California

Sent via UPS

Subject: Work Plan for Confirmation Soil Borings
ARCO Facility No. 206
302 West First Street
Santa Ana, California

Dear Mr. Bento:

On behalf of Atlantic Richfield Company (ARCO), Delta Environmental Consultants, Inc. (Delta) has prepared this *Work Plan for Confirmation Soil Borings* at ARCO Facility No. 206, located at 302 West First Street in the City of Santa Ana, California (the Site). This work plan was prepared in response to a telephone conversation between Mr. Jay Bento of the City of Santa Ana Fire Department (SAFD) and Mr. Aaron Baird of Delta on January 19, 2005. During this conversation it was discussed that confirmation soil borings will be required at this site before considering the Site for case closure. The purpose of the proposed assessment is to provide the SAFD with soil analytical data illustrating that petroleum hydrocarbon concentrations detected during previous assessments have been remediated and/or have attenuated. Presented herein is a brief site description, summary of previous investigations, remedial history, description of site geology and hydrology, and proposed scope of work detailing the drilling and sampling of three confirmation soil borings.

SITE DESCRIPTION

The Site is an active retail gasoline station located on the southwest corner of the intersection of West First Street and Broadway in the City of Santa Ana, County of Orange, California (Figure 1). Station operations consist of self-serve gasoline dispensing along with an am/pm mini-mart. Four double-walled 10,000 gallon underground storage tanks (USTs) are located in the eastern portion of the Site. According to the United States Geological Survey (USGS) 7.5 minute topographic map, Tustin Quadrangle, the Site is located at an elevation of approximately 110 feet above mean sea level (MSL), with surface topography sloping gently toward the southwest.

The Site is located in a mixed business/residential area. The adjoining property to the south of the Site is occupied by a paved parking area and an auto repair facility. The adjoining property to the west of the Site is residential. Other retail stores are located to the north and east of the Site, across West First Street and Broadway.

SITE HISTORY

A gasoline release was reported on June 9, 1992, to the SAFD, UST Division. The release was reported to have occurred from a leaking impact valve on the No. 6 dispenser. ARCO requested a site investigation be performed to determine the extent of the release.

On September 10, 1992, SEACOR supervised the drilling and sampling of one angled soil boring (B-1) to the east of the southern dispenser. Soil boring locations are presented in Figure 2. The angle boring was drilled at a 25 degree angle from vertical and was advanced to a total depth of 47 feet below ground surface (bgs) along the line of drilling. Soil samples were collected at five-foot depth intervals, and screened in the field for volatile organic compounds using an organic vapor analyzer. Field observations indicated that petroleum hydrocarbons were present in the soil from a depth of approximately 12 feet bgs to 32 feet bgs. Concentrations of total petroleum hydrocarbons as gasoline (TPHg) were detected from 4.9 to 6,100 milligrams per kilogram (mg/kg). Detectable benzene concentrations ranged from 0.020 to 100 mg/kg (SEACOR, 1992). Soil sample analytical results are presented in Table 1.

On February 18, 19, and 23, 1993, SEACOR supervised the drilling and sampling of eight soil borings (B-2 through B-9) to depths ranging from approximately 40 to 50 feet bgs. Soil borings B-5 and B-6 were converted into soil vapor extraction (SVE) wells VW-5 and VW-6, respectively. Detectable concentrations of TPHg above SAFD action levels (100 mg/kg) were noted in three of the eight soil borings (B-3, B-4, and B-6). The highest TPHg concentration of 6,500 mg/kg was noted in the soil sample collected from boring B-6 at 15 feet bgs. Detectable benzene concentrations ranged from 0.0068 to 84 mg/kg. The highest benzene concentration was indicated in the soil sample collected from boring B-6 at 30 feet bgs. Groundwater was not encountered in any of the soil borings (SEACOR, 1993a).

On June 6, 1993, SEACOR performed an SVE pilot study utilizing SVE wells VW-5 and VW-6. The purpose of the test was to evaluate the effectiveness of SVE as a remedial technology for hydrocarbon impacted soils at the Site. The SVE pilot test results indicated that the maximum radius of influence was approximately 30 feet. The laboratory analytical data indicated that the influent tedlar bag vapor sample concentration from SVE well VW-5 was 12,000 milligrams per meter cubed (SEACOR, 1993b).

During September and October, 1993, SEACOR observed the removal of four 6,000 gallon, single-walled steel gasoline USTs from the southeast corner of the Site. During UST, dispenser, and piping replacement activities, a SEACOR representative collected three soil samples beneath the former dispensers (PD01, PD02A, and PD02B), ten soil samples beneath the former product lines (TR01 through TR10), seven soil samples beneath the former gasoline USTs (TK01, TK02, S01, SW01, E01, NW01, and N01), and one soil sample beneath the former waste oil UST (WTS01). Laboratory analytical results for samples collected under the former USTs indicated TPHg concentrations ranging from less than the laboratory method detection limit (MDL) on the south-southwest side of the tank excavation to 510 mg/kg on the north side of the excavation. Soil samples collected along the dispenser product lines indicated a maximum TPHg concentration of 1.9 mg/kg in the soil sample located adjacent to the middle of the northern dispenser island. The laboratory analytical data indicated a total recoverable petroleum hydrocarbon (TRPH) concentration of 1,300 mg/kg in the soil sample collected from beneath the former waste oil UST. Soil samples collected along the vent line trenches indicated a maximum TPHg concentration of 76 mg/kg at the northeast corner of the station building. Approximately 200 cubic yards of soil were removed from the former tank pit during excavation activities. All excavated soil was stockpiled on-site, and subsequently used as backfill for the UST excavation (SEACOR, 1994).

A new UST pit was excavated near the northeast corner of the Site. Approximately 756 cubic yards of native soil were removed from the new tank excavation and stockpiled along the southeast corner of the Site. Four new 10,000

gallon, double-walled fiberglass USTs were installed within the new UST pit. Approximately 1,147 tons of stockpiled soil was transported off-site to TPS in Adelanto, California for thermal treatment (SEACOR, 1994a).

On November 2, 1993, SECOR submitted a Remedial Action Plan (RAP) to the SAFD. The RAP proposed the use of SVE technology as the remedial alternative to mitigate impacted soils at the Site (SECOR, 1993c).

On May 2 and 3, 1994, SEACOR supervised the drilling and sampling of five SVE wells (VW-12, VW-13, VW-14, VW-15, and VW-16) within pre-set well boxes and conductor casing installed during the tank removal operation. All wells were advanced until two consecutive soil samples, collected at five foot depth intervals, indicated either no detectable concentrations of petroleum hydrocarbons or contained detectable concentrations of petroleum hydrocarbons less than SAFD action levels. Selected soil samples were submitted to a California Department of Health Services (CDHS) certified on-site mobile laboratory for analyses. Additionally, one soil sample from each well, which contained the highest TPHg concentration, was also analyzed for organic lead. Analyses of the soil samples revealed that 27 of the 43 soil samples collected showed detectable concentrations of petroleum hydrocarbons. Detectable TPHg concentrations ranged from 11 to 4,413 mg/kg. The highest TPHg concentration was reported in soil sample VW-13 at 35 feet bgs. Detectable concentrations of benzene ranged from 0.102 to 22.033 mg/kg. The highest benzene concentration was reported in soil sample VW-13 at 35 feet bgs (SEACOR, 1994b).

On March 20, 1996, SECOR International Inc. (SECOR) commenced operation of a SVE system. The SVE system was connected to SVE wells VW-5, VW-6, and VW-12 through VW-16. Based on a significant reduction in influent hydrocarbon concentrations, the system was shut down on June 17, 1996. During the period from March 20 through June 17, 1996, the SVE system operated for 1,331 hours and removed approximately 4,747 pounds of hydrocarbons from the subsurface (SECOR, 1996).

On June 10, 1999, SECOR supervised the drilling and sampling of three confirmation soil borings (CSB-1, CSB-3, and CSB-4). The purpose of the borings was to confirm the effectiveness of SVE remedial efforts in reducing petroleum hydrocarbon concentrations at the Site. Borings CSB-1 and CSB-4 were advanced vertically to depths of 60.5 and 50.5 feet bgs, respectively. Boring CSB-3 was advanced at an angle of 30 degrees from vertical to a depth of 60.5 feet bgs. The soil analytical data indicated that petroleum hydrocarbons exist primarily above the approximate depth of 40 feet bgs beneath the Site. In the report summarizing the results of the confirmation soil borings, SECOR requested case closure be granted (SECOR, 1999).

On October 28, 1999, during fuel dispenser and piping replacement activities, a Delta representative collected soil samples beneath the former dispenser and piping locations under the direction of Inspector Jay Bento of the SAFD. Four dispenser samples were collected and identified as D1-2 through D4-2. Four piping samples were collected and identified as P1-2 through P4-2. The samples were collected at a depth of approximately two feet beneath the former dispenser and piping locations (Delta, 1999).

The SVE system was re-started on November 6, 2000. The SVE system is connected to seven wells (VW-5, VW-6, VW-12, VW-13, VW-14, VW-15, and VW-16). Laboratory analytical results indicated that influent vapors at startup contained 1,300 parts per million by volume (ppmv) volatile fuel hydrocarbons (VFH). On May 10, 2002, Delta Environmental Consultants, Inc. (Delta) assumed responsibility for the operation and maintenance of the SVE system. As of January 3, 2005, the SVE system has operated for 31,409 hours and has removed approximately 17,838 pounds of hydrocarbons from the subsurface.

SITE GEOLOGY AND PHYSIOGRAPHY

The Site is located in the Santa Ana Gap which lies between the Newport and Huntington Mesas (DWR, 1966). The topography is nearly flat with a gentle slope toward the south-southwest. The Pacific Ocean is located approximately 8.5 miles southwest of the Site. The concrete-lined Santa Ana River channel is located about 2.5 miles west of the

Site. The area is underlain by recent alluvium deposited by the Santa Ana River, by Santiago Creek from the Santa Ana Mountains, and by minor streams from hills to the north and northeast (DWR, 1959).

The lithology beneath the Site is characterized by fine to coarse grained sands with interbedded silt and clay lenses. Subsurface materials are composed of fine to coarse grained sand to a depth of approximately 11 feet. A clayey silt/silty clay layer is present from 11 to 26 feet bgs. A silt layer is present between 26 and 29 feet. The silt layer is underlain by a clay layer to about 32 feet bgs. A clayey silt layer is present between 32 and 35.5 feet bgs. Coarse grain sand is present between 35.5 and 36.5 feet bgs. A clay layer is present between 36.5 and 38 feet bgs, with an interbedded thin (2-3 inch) layer of sand. Sand and gravel is present from 38 to 50-feet bgs.

SITE HYDROLOGY

The Site is located within the pressure area of the Orange County Coastal Plain Groundwater Basin. A large synclinal groundwater basin underlies the Coast Plain of Orange County and is composed of a pressure and non-pressure area. The non-pressure, or forebay, area is located on the northeastern portion of the basin and supplies the recharge, both artificial and natural, to the aquifer systems. The southwestern area of the basin consists of a pressure area where groundwater is confined in multiple aquifers (DWR, 1959). The northern boundary for the Forebay/Pressure Area is located north of Santa Ana, and runs approximately parallel to the Interstate 5 freeway.

Groundwater flow in the coastal plain is from the forebay to the pressure area, with subsurface discharge to the Pacific Ocean during periods when piezometric levels are above sea level. Subsurface outflow occurs primarily at the Santa Ana and Alamitos Gaps in aquifers not affected by faulting (DWR, 1959). Principal aquifers are the Talbert aquifer of Recent age in the Santa Ana Gap, and its correlative Bolsa Aquifer in the northwesterly portion of the basin, ranging from 50 feet to nearly 200 feet bgs (DWR, 1960).

Locally, near surface groundwater occurs in unconfined perched aquifers. Perched groundwater consists largely of irrigation return and infiltration of other surface waters above the confining sediments of the deeper aquifers (DWR, 1960). Groundwater has not been encountered during advancement of soil borings at the Site to a total depth of 60 feet bgs.

According to the California State Water Resources Control Board's web site (GeoTracker; https://geotracker.swrcb.ca.gov) database there are seven groundwater production wells within a one-mile radius of the Site. The closest well to the Site is State Well No. 3010038-015, which is located approximately 1,600 feet west of the Site. Well 3010038-015 is an active municipal supply well owned and operated by the City of Santa Ana. State Well No. 3010038-029 is an active municipal supply well owned and operated by the City of Santa Ana and is located approximately 1,600 feet west of the Site. State Well No. 3010038-033 is an inactive municipal supply well owned and operated by the City of Santa Ana and is located approximately 2,000 feet west of the Site. State Well No. 3010038-042 is an active municipal supply well owned and operated by the City of Santa Ana and is located approximately 1,800 feet northeast of the Site. State Well No. 3010038-041 is an active municipal supply well owned and operated by the City of Santa Ana and is located approximately 1,800 feet northeast of the Site. State Well No. 3010038-018 is an active municipal supply well owned and operated by the City of Santa Ana and is located approximately 2,500 feet northwest of the Site. State Well No. 3010038-055 is an inactive municipal supply well owned and operated by the City of Santa Ana and is located approximately 4,200 feet northwest of the Site.

PROPOSED SCOPE OF WORK

In order to confirm the removal and/or attenuation of petroleum hydrocarbons and fuel oxygenates detected in soil during previous assessments at the Site, the drilling and sampling of three confirmation soil borings (CSB-5, CSB-6, and CSB-7) are proposed at the locations depicted on Figure 2. One soil boring (CSB-5) is proposed north of the existing UST locations. Analytical results of soil samples collected from borings CSB-1, CSB-3, and VW-6, located north of the existing USTs, indicated the highest concentrations of petroleum hydrocarbons beneath the Site. One soil boring (CSB-6)

is proposed west of the existing UST locations in the vicinity of boring B-8 and SVE wells VW-14 and VW-15. One soil boring (CSB-7) is proposed south of the existing UST locations in the vicinity of boring CSB-4 and SVE well VW-12. The proposed work will be conducted utilizing the following scope of work:

Task 1: Project Initiation

- Prepare a site-specific Health and Safety Plan. A copy of the Health and Safety Plan will be on site during all Delta-monitored field events.

- Mark the proposed boring locations shown on Figure 2, and notify Underground Service Alert, SAFD, and Atlantic Richfield Company of the scheduled field activities.

- A private utility locating company will be contracted to locate underground utilities on site prior to the initiation of drilling.

- Obtain boring installation permits from the OCHCA.

Task 2: Direct-Push Confirmation Boring Advancement

- Advance three direct-push soil borings (CSB-5, CSB-6, and CSB-7) to an approximate depth of 50 feet bgs at the locations shown on Figure 2. The initial 5-feet of each boring may be advanced using a hand auger and/or posthole digger to reduce the potential for damaging underground improvements. The soil borings will be advanced past the initial 5 feet using a cone penetration testing (CPT) rig.

- During advancement, Delta will collect soil samples for chemical analysis at five-foot intervals from five feet bgs to the terminal depth of each boring. To avoid cross contamination between samples, sampling equipment will be washed with an aqueous solution of Alconox™ detergent and double rinsed with distilled water. Soil samples will be collected using a one-foot piston-type sampler equipped with two 6-inch brass sampling sleeves. The deepest, intact sleeve from each sample interval will be lined with Teflon™ sheets, capped, labeled, placed in a resealable plastic bag, and stored in an ice-chilled container until delivered to the analytical laboratory. Chain-of-custody procedures will be followed from the time the samples are collected until the time they are relinquished to the laboratory. Soil from the other sleeve will be used for classification according to the Unified Soil Classification System and for field screening with a photo-ionization detector (PID). Soil classifications, PID screening results, and other soil sampling data will be presented on individual boring logs. Following completion, each boring will be backfilled with bentonite grout and resurfaced with concrete.

Task 3: Sample Analysis

- Soil samples will be submitted to a CDHS-certified laboratory for analysis. The samples will be analyzed for TPHg according to Environmental Protection Agency (EPA) Method 8015 Modified and for benzene, toluene, ethylbenzene, xylenes, methyl tertiary butyl ether (MTBE), di-isopropyl ether (DIPE), ethyl tertiary butyl ether (ETBE), tertiary amyl methyl ether (TAME), tertiary butanol (TBA), and ethanol according to EPA Method 8260B.

Task 4: Waste Management

- Soil cuttings and decontamination water generated during the field activities will be contained in Department of Transportation-approved, 55-gallon, steel drums. These drums will be appropriately labeled and temporarily stored on-site pending analytical results. Upon receipt of soil analytical results, the drums will be removed from the Site and transported to an off-site disposal facility.

Task 5: Report Preparation

- Prepare a summary report of field activities and analytical results for submittal to the SAFD. If appropriate, this report will also provide the SAFD with rationale for granting regulatory case closure for the Site.

Schedule

Upon review and approval of this work plan by the SAFD, Delta will schedule the field activities. Dependent upon equipment availability, the field activities may require up to one month to complete. Delta expects to receive the final laboratory reports of the soil sample analysis approximately two weeks after sample submittal. After receiving the final laboratory reports, approximately six weeks will be required to prepare and submit the final report.

If you have questions or comments regarding this work plan, please contact Aaron Baird at (949) 360-5795.

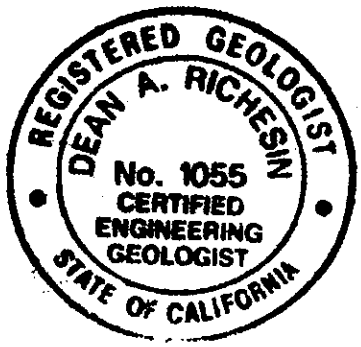
Sincerely,
DELTA ENVIRONMENTAL CONSULTANTS, INC.

Aaron Baird
Project Manager

2/4/05
Date

Dean A. Richesin
California Registered Geologist No. 3587
Certified Engineering Geologist No. 1055

2/7/05
Date



Attachments:

	Figure 1	Site Location Map
	Figure 2	Site Map
	Table 1	Historical Soil Analytical Results

Cc: Mr. Darrell Fah, Atlantic Richfield Company, La Palma, California
Ms. Valerie Jahn-Bull, CRWQCB-Santa Ana Region, Riverside, California
Mr. Fabio Minervini, England Geosystem, Inc., Irvine, California

REFERENCES

Delta Environmental Consultants Inc., (1999), Dispenser Soil Sampling Report, dated December 22, 1999.

SEACOR, (1992), Phase II Site Assessment, dated October 27, 1992.

SEACOR, (1993a), Subsurface Environmental Investigation Report, dated April 1, 1993.

SEACOR., (1993b), Report on Venting Test Performed at ARCO Station No. 206, Santa Ana, California, dated August 6, 1993.

SEACOR., (1993c), Remedial Action Plan, dated November 2, 1993.

SEACOR, (1994a), Underground Storage Tank Removal and Replacement Report, dated March 7, 1994.

SEACOR, (1994b), Vapor Extraction Well Installation, dated June 23, 1994.

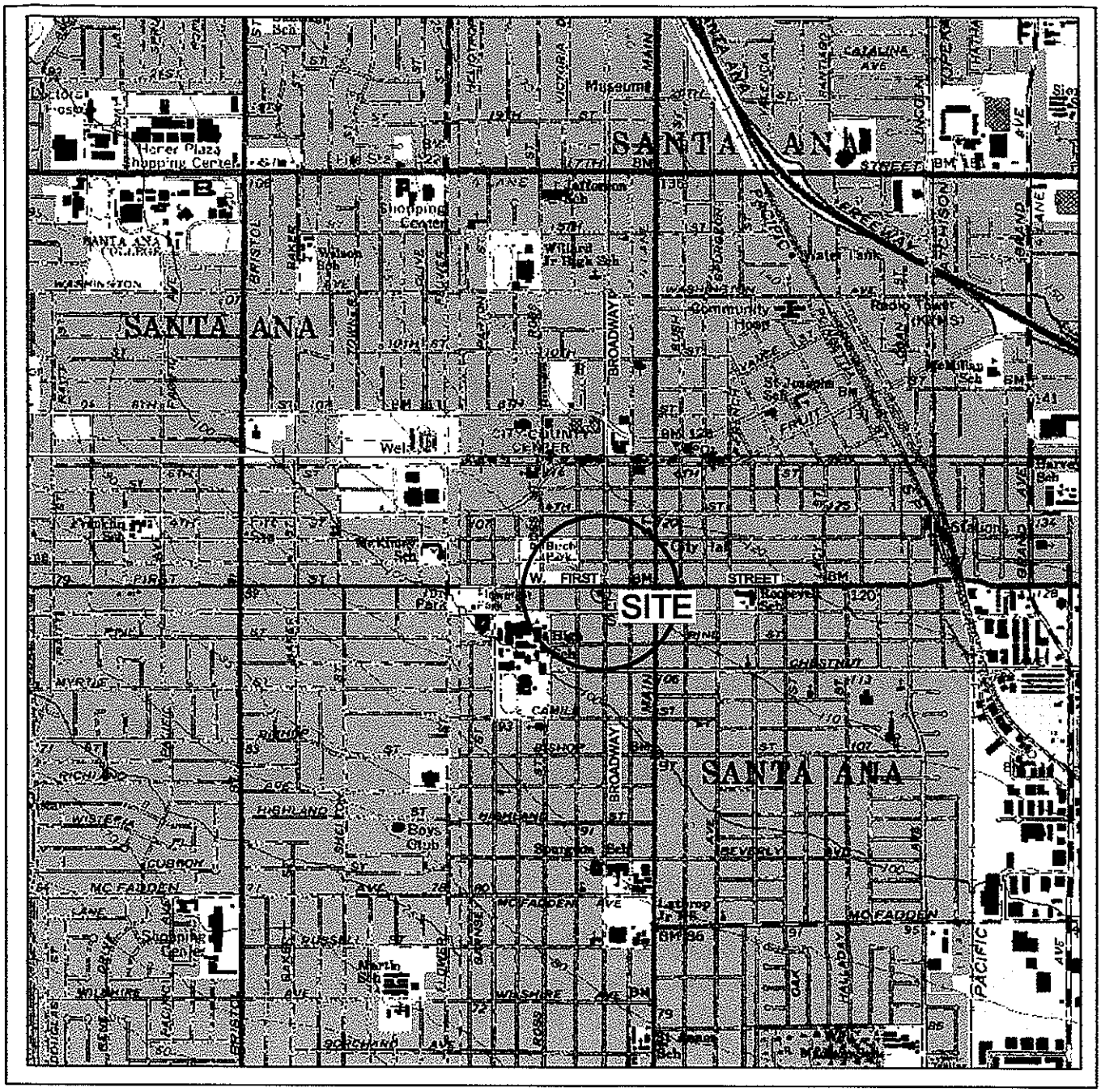
SECOR International Inc. (SECOR, 1996), Request for Closure Report, dated December 10, 1996.

SECOR International Inc. (SECOR, 1999), Confirmation Soil Boring Report and Request for Closure, dated July 30, 1999.

State of California, Department of Water Resources (DWR, 1959), Santa Ana River Investigation, Bulletin No. 15, February 1959.

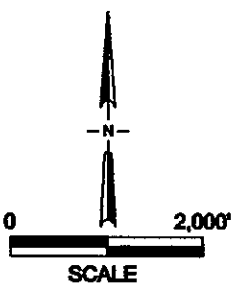
State of California, Department of Water Resources (DWR, 1960), Quality of Ground Waters in California, Southern California, Bulletin No. 66-60, April 1960.

State of California, Department of Water Resources (DWR, 1966), Santa Ana Gap Salinity Barrier, Orange County, Bulletin No. 147.1, December 1966.



GENERAL NOTES:
BASE MAP FROM 3-D TOPO QUADS
TUSTIN AND NEWPORT BEACH, CA. QUADRANGLE
7.5 MINUTE TOPOGRAPHIC MAP
1965
PHOTOREVISED 1981

QUADRANGLE LOCATION



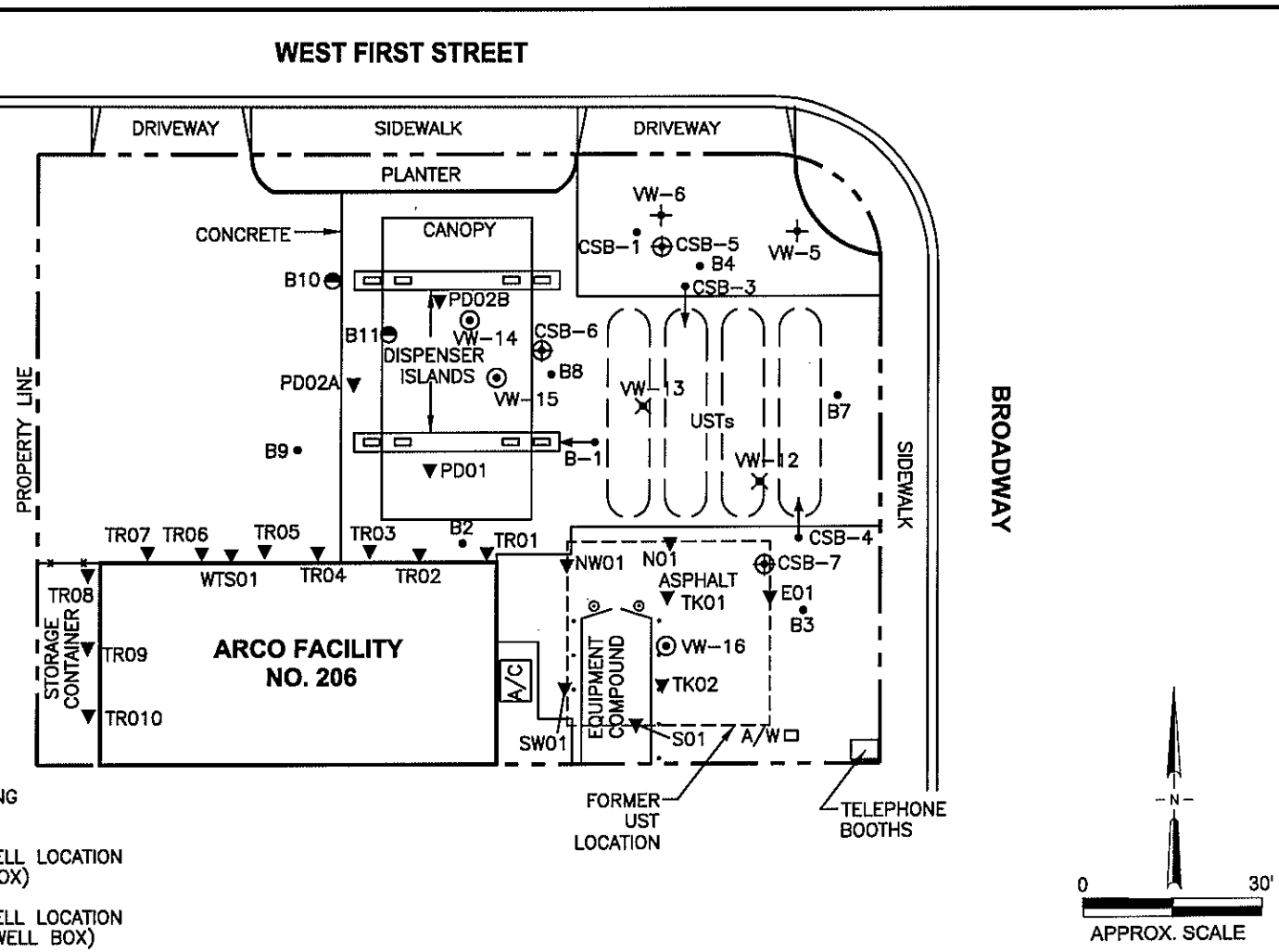
SCALE

FIGURE 1

SITE LOCATION MAP
ARCO FACILITY NO. 206
302 W. FIRST STREET
SANTA ANA, CA.

PROJECT NO. 00725		DRAWN BY K. MARTIN	
FILE NO. AO-725-03		PREPARED BY A. BAIRD	
DATE 04 JAN 05	REV. 0	REVIEWED BY	

Delta Environmental Consultants, Inc.



LEGEND

CSB–7 ⊕	PROPOSED SOIL BORING LOCATION
VW–5 +	VAPOR EXTRACTION WELL LOCATION (12"ø ROUND WELL BOX)
VW–14 ⊙	VAPOR EXTRACTION WELL LOCATION (24" X 24" SQUARE WELL BOX)
VW–12 ✕	VAPOR EXTRACTION WELL LOCATION (16" CONDUCTOR CASING W/36"ø WELL BOX)
CSB–1 •	SOIL BORING LOCATION
B10 ◓	HAND AUGER LOCATION
CSB–4 ←•	ANGLED SOIL BORING LOCATION
PD01 ▼	PRODUCT LINE SOIL SAMPLE LOCAITON
TR09 ▼	VENT LINE SOIL SAMPLE LOCATION
TK02 ▼	UST SOIL SAMPLE LOCATION
SW01 ▼	UST EXCAVATION SIDEWALL SOIL SAMPLE LOCATION
WTS01 ▼	WASTE OIL UST SOIL SAMPLE LOCATION

FIGURE 2

SITE MAP
ARCO FACILITY NO. 206
302 W. FIRST STREET
SANTA ANA, CA.

PROJECT NO. 00725		DRAWN BY K. MARTIN	
FILE NO. A0–725–02		PREPARED BY A. BAIRD	
DATE 01 FEB 05	REV. 0	REVIEWED BY	

Delta Environmental Consultants, Inc.

TABLE 1

HISTORICAL SOIL ANALYTICAL RESULTS

ARCO FACILITY NO. 206
302 WEST FIRST STREET
SANTA ANA, CALIFORNIA

Sample I.D.	Sample Depth (feet)	Date Sampled	EPA 8015B	EPA Method 8020/8021				EPA Method 8260B					EPA 7240
			TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	TBA (mg/kg)	Lead (mg/kg)
B-1	12	09/10/92	3100	10	210	80	500	NA	NA	NA	NA	NA	NA
B-1	27	09/10/92	6100	100	500	140	690	NA	NA	NA	NA	NA	NA
B-1	37	09/10/92	4.9	1.2	0.046	0.12	0.19	NA	NA	NA	NA	NA	NA
B-1	42	09/10/92	ND<0.50	0.029	0.038	ND<0.0050	0.020	NA	NA	NA	NA	NA	NA
B-2	25	02/18/93	1.1	0.22	0.19	0.030	0.14	NA	NA	NA	NA	NA	NA
B-2	40	02/18/93	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	NA	NA	NA	NA	NA	NA
B-3	10	02/18/93	540	0.051	0.21	2.5	13	NA	NA	NA	NA	NA	NA
B-3	20	02/18/93	5.8	0.39	0.75	0.16	0.84	NA	NA	NA	NA	NA	NA
B-3	30	02/18/93	2.6	0.91	0.087	0.11	0.19	NA	NA	NA	NA	NA	NA
B-3	40	02/18/93	ND<0.50	0.011	0.0081	ND<0.0050	0.009	NA	NA	NA	NA	NA	NA
B-4	10	02/18/93	230	0.16	0.90	2.2	10.0	NA	NA	NA	NA	NA	NA
B-4	30	02/18/93	17	1.0	0.48	0.14	0.71	NA	NA	NA	NA	NA	NA
B-4	40	02/18/93	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	NA	NA	NA	NA	NA	NA
B-5 (VW-5)	10	02/19/93	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	NA	NA	NA	NA	NA	NA
B-5 (VW-5)	20	02/19/93	17	0.21	1.8	0.41	2.70	NA	NA	NA	NA	NA	NA
B-5 (VW-5)	30	02/19/93	7.6	1.0	2.9	0.22	1.5	NA	NA	NA	NA	NA	NA
B-5 (VW-5)	40	02/19/93	ND<0.50	ND<0.0050	0.018	ND<0.0050	0.007	NA	NA	NA	NA	NA	NA
B-5 (VW-5)	50	02/19/93	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	NA	NA	NA	NA	NA	NA
B-6 (VW-6)	10	02/19/93	14	ND<0.0050	ND<0.0050	0.015	0.31	NA	NA	NA	NA	NA	NA
B-6 (VW-6)	15	02/19/93	6500	ND<14	120	160	1100	NA	NA	NA	NA	NA	NA
B-6 (VW-6)	30	02/19/93	6300	84	610	150	860	NA	NA	NA	NA	NA	NA
B-6 (VW-6)	40	02/19/93	ND<0.50	ND<0.0050	0.0059	ND<0.0050	ND<0.0050	NA	NA	NA	NA	NA	NA
B-6 (VW-6)	50	02/19/93	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	0.005	NA	NA	NA	NA	NA	NA
B-7	10	02/19/93	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	0.024	NA	NA	NA	NA	NA	NA
B-7	30	02/19/93	8.6	0.41	2.0	0.19	1.3	NA	NA	NA	NA	NA	NA
B-7	40	02/19/93	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	NA	NA	NA	NA	NA	NA

TABLE 1

HISTORICAL SOIL ANALYTICAL RESULTS

ARCO FACILITY NO. 206
302 WEST FIRST STREET
SANTA ANA, CALIFORNIA

Sample I.D.	Sample Depth (feet)	Date Sampled	EPA 8015B	EPA Method 8020/8021				EPA Method 8260B					EPA 7240
			TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	TBA (mg/kg)	Lead (mg/kg)
B-7	50	02/19/93	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	NA	NA	NA	NA	NA	NA
B-8	10	02/23/93	2.4	0.052	0.0073	0.011	0.33	NA	NA	NA	NA	NA	NA
B-8	20	02/23/93	53	3.7	2.4	0.70	9.3	NA	NA	NA	NA	NA	NA
B-8	30	02/23/93	5.2	0.95	0.49	0.19	0.38	NA	NA	NA	NA	NA	NA
B-8	35	02/23/93	21	2.0	4.6	0.56	3.4	NA	NA	NA	NA	NA	NA
B-8	40	02/23/93	3.4	0.29	0.34	0.14	0.64	NA	NA	NA	NA	NA	NA
B-8	50	02/23/93	0.98	ND<0.0050	0.012	0.0053	0.029	NA	NA	NA	NA	NA	NA
B-9	10	02/23/93	ND<0.52	ND<0.0052	ND<0.0052	ND<0.0052	0.023	NA	NA	NA	NA	NA	NA
B-9	30	02/23/93	1.8	0.44	0.088	0.071	0.22	NA	NA	NA	NA	NA	NA
B-9	40	02/23/93	ND<0.51	0.0068	ND<0.0051	ND<0.0051	0.0096	NA	NA	NA	NA	NA	NA
TK01	NA	09/15/93	510	2.4	12	7.4	46	NA	NA	NA	NA	NA	6.8
TK02	NA	09/15/93	38	0.26	1.3	0.67	4.3	NA	NA	NA	NA	NA	6.6
S01	NA	09/15/93	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	NA	NA	NA	NA	NA	5.2
SW01	NA	09/15/93	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	0.037	NA	NA	NA	NA	NA	5.8
E01	NA	09/15/93	4.6	ND<0.012	ND<0.012	0.021	0.18	NA	NA	NA	NA	NA	6.8
NW01	NA	09/15/93	2.4	ND<0.012	ND<0.012	0.013	ND<0.012	NA	NA	NA	NA	NA	5.9
N01	NA	09/15/93	38	ND<0.24	ND<0.24	ND<0.24	1.3	NA	NA	NA	NA	NA	6.3
PD01	NA	09/17/93	0.97	ND<0.0050	ND<0.0050	ND<0.0050	0.028	NA	NA	NA	NA	NA	4.4
PD02A	NA	09/17/93	1.5	ND<0.012	ND<0.012	ND<0.012	0.11	NA	NA	NA	NA	NA	3.8
PD02B	NA	09/17/93	1.9	ND<0.0050	ND<0.0050	0.0074	0.036	NA	NA	NA	NA	NA	2.9
WTS01	NA	09/17/93	1300*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TR01	NA	09/24/93	76	0.46	1.8	1.0	5.8	NA	NA	NA	NA	NA	3.4
TR02	NA	09/24/93	1.3	ND<0.0050	0.019	0.0082	0.098	NA	NA	NA	NA	NA	4.8
TR03	NA	09/24/93	0.60	ND<0.0050	ND<0.0050	ND<0.0050	0.018	NA	NA	NA	NA	NA	3.1
TR04	NA	09/24/93	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	NA	NA	NA	NA	NA	2.9
TR05	NA	09/24/93	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	NA	NA	NA	NA	NA	3.6
TR06	NA	09/24/93	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	NA	NA	NA	NA	NA	3.9
TR07	NA	09/24/93	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	NA	NA	NA	NA	NA	3.5

TABLE 1

HISTORICAL SOIL ANALYTICAL RESULTS

ARCO FACILITY NO. 206
302 WEST FIRST STREET
SANTA ANA, CALIFORNIA

Sample I.D.	Sample Depth (feet)	Date Sampled	EPA 8015B	EPA Method 8020/8021				EPA Method 8260B					EPA 7240
			TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	TBA (mg/kg)	Lead (mg/kg)
TR08	NA	09/24/93	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	NA	NA	NA	NA	NA	3.7
TR09	NA	09/24/93	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	NA	NA	NA	NA	NA	21
TR10	NA	09/24/93	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	NA	NA	NA	NA	NA	38
B-10	5	10/15/93	6.5	ND<0.011	ND<0.011	ND<0.011	0.210	NA	NA	NA	NA	NA	NA
B-10	10	10/15/93	2.1	0.018	ND<0.005	ND<0.005	0.06	NA	NA	NA	NA	NA	NA
B-11	5	10/15/93	3.8	ND<0.012	ND<0.012	ND<0.012	0.054	NA	NA	NA	NA	NA	NA
B-11	10	10/15/93	2.4	ND<0.012	ND<0.012	ND<0.012	0.070	NA	NA	NA	NA	NA	NA
VW-12	20	05/03/94	21	0.263	0.841	0.172	1.326	NA	NA	NA	NA	NA	ND<0.50
VW-12	25	05/03/94	15	0.170	0.663	0.092	0.777	NA	NA	NA	NA	NA	NA
VW-12	30	05/03/94	11	0.495	1.569	0.221	1.436	NA	NA	NA	NA	NA	NA
VW-12	35	05/03/94	ND<10	0.363	0.049	0.209	0.889	NA	NA	NA	NA	NA	NA
VW-12	40	05/03/94	ND<10	ND<0.005	0.008	ND<0.005	0.04	NA	NA	NA	NA	NA	NA
VW-12	45	05/03/94	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.015	NA	NA	NA	NA	NA	NA
VW-12	50	05/03/94	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.015	NA	NA	NA	NA	NA	NA
VW-12	55	05/03/94	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.015	NA	NA	NA	NA	NA	NA
VW-13	20	05/03/94	17	0.2	0.259	0.102	0.617	NA	NA	NA	NA	NA	NA
VW-13	25	05/03/94	ND<10	0.519	0.572	0.13	0.60	NA	NA	NA	NA	NA	NA
VW-13	30	05/03/94	62	0.739	1.855	0.534	3.006	NA	NA	NA	NA	NA	NA
VW-13	35	05/03/94	4413	22.033	129.851	33.917	222.098	NA	NA	NA	NA	NA	ND<0.50
VW-13	40	05/03/94	ND<10	ND<0.005	0.008	ND<0.005	ND<0.015	NA	NA	NA	NA	NA	NA
VW-13	45	05/03/94	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.015	NA	NA	NA	NA	NA	NA
VW-13	50	05/03/94	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.015	NA	NA	NA	NA	NA	NA
VW-14	5	05/02/94	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.015	NA	NA	NA	NA	NA	NA
VW-14	10	05/02/94	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.015	NA	NA	NA	NA	NA	NA
VW-14	15	05/02/94	ND<10	ND<0.005	ND<0.005	0.059	0.046	NA	NA	NA	NA	NA	NA
VW-14	20	05/02/94	17	0.936	0.336	0.453	0.625	NA	NA	NA	NA	NA	ND<0.50
VW-14	25	05/02/94	ND<10	0.102	0.009	0.054	0.102	NA	NA	NA	NA	NA	NA

TABLE 1

HISTORICAL SOIL ANALYTICAL RESULTS

ARCO FACILITY NO. 206
302 WEST FIRST STREET
SANTA ANA, CALIFORNIA

Sample I.D.	Sample Depth (feet)	Date Sampled	EPA 8015B	EPA Method 8020/8021				EPA Method 8260B					EPA 7240
			TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	TBA (mg/kg)	Lead (mg/kg)
VW-14	30	05/02/94	ND<10	ND<0.005	0.026	ND<0.005	0.017	NA	NA	NA	NA	NA	NA
VW-14	35	05/02/94	ND<10	ND<0.005	0.006	ND<0.005	ND<0.015	NA	NA	NA	NA	NA	NA
VW-14	40	05/02/94	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.015	NA	NA	NA	NA	NA	NA
VW-14	45	05/02/94	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.015	NA	NA	NA	NA	NA	NA
VW-14	50	05/02/94	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.015	NA	NA	NA	NA	NA	NA
VW-15	5	05/02/94	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.015	NA	NA	NA	NA	NA	NA
VW-15	10	05/02/94	49	0.107	0.471	0.372	2.649	NA	NA	NA	NA	NA	ND<0.50
VW-15	15	05/02/94	29	0.542	2.017	0.462	2.654	NA	NA	NA	NA	NA	NA
VW-15	20	05/02/94	48	0.390	1.054	0.353	2.117	NA	NA	NA	NA	NA	NA
VW-15	25	05/02/94	18	0.449	0.360	0.139	0.609	NA	NA	NA	NA	NA	NA
VW-15	30	05/02/94	ND<10	0.156	0.275	ND<0.005	0.386	NA	NA	NA	NA	NA	NA
VW-15	35	05/02/94	ND<10	ND<0.005	0.007	ND<0.005	ND<0.015	NA	NA	NA	NA	NA	NA
VW-15	40	05/02/94	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.015	NA	NA	NA	NA	NA	NA
VW-15	45	05/02/94	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.015	NA	NA	NA	NA	NA	NA
VW-15	50	05/02/94	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.015	NA	NA	NA	NA	NA	NA
VW-16	10	05/03/94	64	0.089	0.412	0.678	2.196	NA	NA	NA	NA	NA	ND<0.50
VW-16	15	05/03/94	54	1.412	4.392	0.913	5.858	NA	NA	NA	NA	NA	NA
VW-16	20	05/03/94	25	0.283	0.793	0.142	0.970	NA	NA	NA	NA	NA	NA
VW-16	25	05/03/94	ND<10	0.188	0.143	0.052	0.187	NA	NA	NA	NA	NA	NA
VW-16	30	05/03/94	ND<10	0.232	ND<0.005	0.080	ND<0.015	NA	NA	NA	NA	NA	NA
VW-16	35	05/03/94	ND<10	ND<0.005	ND<0.005	0.022	ND<0.015	NA	NA	NA	NA	NA	NA
VW-16	40	05/03/94	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.015	NA	NA	NA	NA	NA	NA
VW-16	45	05/03/94	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.015	NA	NA	NA	NA	NA	NA
CSB1-5	5	06/10/99	ND<0.1	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.010	NA	NA	NA	NA	NA
CSB1-10	10	06/10/99	2600	ND<5	ND<5	ND<5	16	ND<10	NA	NA	NA	NA	NA
CSB1-15	15	06/10/99	600	ND<0.5	35	7.3	53	ND<1	NA	NA	NA	NA	NA
CSB1-20	20	06/10/99	1100	ND<5	23	18	140	ND<10	NA	NA	NA	NA	NA
CSB1-25	25	06/10/99	23	0.56	3.0	0.44	3.0	ND<0.5	NA	NA	NA	NA	NA
CSB1-30	30	06/10/99	11000	69	680	170	980	ND<50	NA	NA	NA	NA	NA

TABLE 1

HISTORICAL SOIL ANALYTICAL RESULTS

ARCO FACILITY NO. 206
302 WEST FIRST STREET
SANTA ANA, CALIFORNIA

Sample I.D.	Sample Depth (feet)	Date Sampled	EPA 8015B	EPA Method 8020/8021				EPA Method 8260B					EPA 7240
			TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	TBA (mg/kg)	Lead (mg/kg)
CSB1-35	35	06/10/99	0.4	0.037	0.057	0.006	0.044	ND<0.010	NA	NA	NA	NA	NA
CSB1-40	40	06/10/99	0.2	ND<0.005	0.022	ND<0.005	0.022	ND<0.010	NA	NA	NA	NA	NA
CSB1-45	45	06/10/99	0.2	0.011	0.026	ND<0.005	0.009	ND<0.010	NA	NA	NA	NA	NA
CSB1-50	50	06/10/99	0.1	ND<0.005	ND<0.005	ND<0.005	0.006	ND<0.010	NA	NA	NA	NA	NA
CSB1-55	55	06/10/99	ND<0.1	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.010	NA	NA	NA	NA	NA
CSB1-60	60	06/10/99	ND<0.1	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.010	NA	NA	NA	NA	NA
CSB3-5	5	06/10/99	ND<0.1	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.010	NA	NA	NA	NA	NA
CSB3-10	10	06/10/99	2300	ND<2.5	20	30	310	ND<5	NA	NA	NA	NA	NA
CSB3-15	15	06/10/99	1700	ND<2.5	39	37	230	ND<5	NA	NA	NA	NA	NA
CSB3-20	20	06/10/99	8000	26	520	150	870	ND<50	NA	NA	NA	NA	NA
CSB3-25	25	06/10/99	9200	50	600	150	870	ND<50	NA	NA	NA	NA	NA
CSB3-30	30	06/10/99	4500	33	300	74	420	22	ND<2	ND<2	ND<2	ND<40	NA
CSB3-35	35	06/10/99	72	3.1	8.7	1.2	7.4	ND<0.5	NA	NA	NA	NA	NA
CSB3-40	40	06/10/99	3100	20	200	54	310	ND<10	NA	NA	NA	NA	NA
CSB3-45	45	06/10/99	0.6	0.010	0.051	0.006	0.058	ND<0.010	NA	NA	NA	NA	NA
CSB3-50	50	06/10/99	0.6	0.008	0.053	0.010	0.059	ND<0.010	NA	NA	NA	NA	NA
CSB3-55	55	06/10/99	0.4	ND<0.005	0.034	0.008	0.052	ND<0.010	NA	NA	NA	NA	NA
CSB3-60	60	06/10/99	0.2	ND<0.005	0.014	ND<0.005	0.016	ND<0.010	NA	NA	NA	NA	NA
CSB4-5	5	06/10/99	ND<0.1	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.010	NA	NA	NA	NA	NA
CSB4-10	10	06/10/99	11	ND<0.005	ND<0.005	0.062	0.44	0.021	NA	NA	NA	NA	NA
CSB4-15	15	06/10/99	56	ND<0.25	ND<0.25	ND<0.25	0.42	ND<0.5	NA	NA	NA	NA	NA
CSB4-20	20	06/10/99	ND<0.1	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.010	NA	NA	NA	NA	NA
CSB4-25	25	06/10/99	0.2	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.010	NA	NA	NA	NA	NA
CSB4-30	30	06/10/99	1.2	0.30	ND<0.005	0.087	ND<0.005	0.17	ND<0.005	ND<0.005	ND<0.005	ND<0.100	NA
CSB4-35	35	06/10/99	0.2	ND<0.005	ND<0.005	0.011	ND<0.005	0.025	NA	NA	NA	NA	NA
CSB4-40	40	06/10/99	ND<0.1	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.010	NA	NA	NA	NA	NA
CSB4-45	45	06/10/99	ND<0.1	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.010	NA	NA	NA	NA	NA
CSB4-50	50	06/10/99	ND<0.1	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.010	NA	NA	NA	NA	NA

TABLE 1

HISTORICAL SOIL ANALYTICAL RESULTS

ARCO FACILITY NO. 206
302 WEST FIRST STREET
SANTA ANA, CALIFORNIA

Sample I.D.	Sample Depth (feet)	Date Sampled	EPA 8015B	EPA Method 8020/8021				EPA Method 8260B					EPA 7240
			TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	TBA (mg/kg)	Lead (mg/kg)
D1-2	2	10/28/99	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.015	ND<0.0050	NA	NA	NA	NA	NA
D2-2	2	10/28/99	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.015	ND<0.0050	NA	NA	NA	NA	NA
D3-2	2	10/28/99	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.015	ND<0.0050	NA	NA	NA	NA	NA
D4-2	2	10/28/99	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.015	ND<0.0050	NA	NA	NA	NA	NA
P1-2	2	10/28/99	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.015	ND<0.0050	NA	NA	NA	NA	NA
P2-2	2	10/28/99	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.015	ND<0.0050	NA	NA	NA	NA	NA
P3-2	2	10/28/99	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.015	ND<0.0050	NA	NA	NA	NA	NA
P4-2	2	10/28/99	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.015	ND<0.0050	NA	NA	NA	NA	NA

NOTES:

EPA = Environmental Protection Agency
mg/kg = Milligrams per kilogram
TPHg = Total petroleum hydrocarbons as gasoline
MTBE = Methyl *tert*-butyl ether
DIPE = Di-isopropyl ether
ETBE = Ethyl *tert*-butyl ether
TAME = *Tert*-amyl methyl ether
TBA = T*ert*-butanol
NA = Not analyzed
ND< = Not detected at or above stated reporting limit

Sample WTS01 was analyzed for Total Recoverable Petroleum Hydrocarbans acccording to EPA Method 418.1